

## CLAIMS

What is claimed is:

1. A method of selecting cells resistant to selective agent by inducing directed evolution while applying a selective agent to the cells to determine those cells having resistance.
2. The method according to claim 1, wherein said inducing step includes continuous culturing with the selective agent.
3. The method according to claim 2, wherein said continuous culturing further includes halting the continuous culturing and continuing continuous culturing with the selective agent.
4. The method according to claim 2, wherein said continuous culturing further includes continuously infusing the selective agent.
5. The method according to claim 1, wherein said application step includes culturing the microorganisms in a chemostat.
6. A method of generating mutant drug targets by inducing directed evolution while applying a selective agent to the cells, thereby determining potential drug targets.
7. The method according to claim 6, wherein said continuous culturing further includes halting the continuous culturing and continuing continuous culturing with the selective agent.
8. The method according to claim 7, wherein said continuous culturing further includes infusing continuously the selective agent.
9. The method according to claim 6, wherein said application step includes culturing the microorganisms in a chemostat.
10. A method of determining emerging resistance by inducing directed evolution while applying a selective agent to cells, thereby selecting those microorganisms having emerging resistance.
11. The method according to claim 10, wherein said application step

includes continuous culturing with the selective agent.

12. The method according to claim 11, wherein said continuous culturing further includes halting the continuous culturing and continuing continuous culturing with the selective agent.

13. The method according to claim 11, wherein said continuous culturing further includes infusing continuously the selective agent.

14. The method according to claim 10, wherein said application step includes culturing the microorganisms in a chemostat.

15. A method of selecting cells resistant to selective agent by inducing directed evolution while applying a mutagen to the cells to determine those cells having resistance.

16. The method according to claim 15, wherein said inducing step includes continuous culturing with the mutagen.

17. The method according to claim 16, wherein said continuous culturing further includes halting the continuous culturing and continuing continuous culturing with the mutagen.

18. The method according to claim 16, wherein said continuous culturing further includes continuously infusing the mutagen.

19. The method according to claim 15, wherein said application step includes culturing the microorganisms in a chemostat.